



NATIONAL WEATHER
SERVICE
DES MOINES IA

- **WWII Veteran Recognized**
- **Flooding Impacts Project**



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Volume 3, Issue 3

Fall 2009/Winter 2009

WWII Veteran and Honor Flight recipient calls it quits as a Cooperative Weather Observer

by Pat Kinney, Waterloo/Cedar Falls Courier & Brad Fillbach, National Weather Service



On October 13th, Leonard Vorba of Traer, Iowa received his 25 year Length of Service award as a cooperative weather observer and he also decided it was time to call it quits. On August 15th, Leonard turned 90 years old. Leonard is a WWII veteran and on August 11th, he was one of some 300 WWII veterans chosen to be part of the Honor Flight which took WWII veterans on a free flight to Washington DC for a tour of the newer WWII Memorial. Leonard and his wife, Lois will be celebrating their 50th wedding anniversary on November 21st. Leonard flew 35 missions in WWII. Back then, he and his buddies flew a brand new US Air Force Consolidated B-24 Liberator bomber to Europe, and to war.

When the Iowa veterans arrived in Washington DC, they were greeted at the memorial by former US Senator Bob Dole and his wife, former US Senator Elizabeth Dole. Bob Dole, the 1996 Republican presidential nominee, who was severely wounded in Italy during the war, helped raise \$191 million for the memorial as its national chairman. It was dedicated in 2004. Leonard said "it was especially moving to visit the memorial with so many other veterans, all of whom had the memories of deceased comrades on their minds."

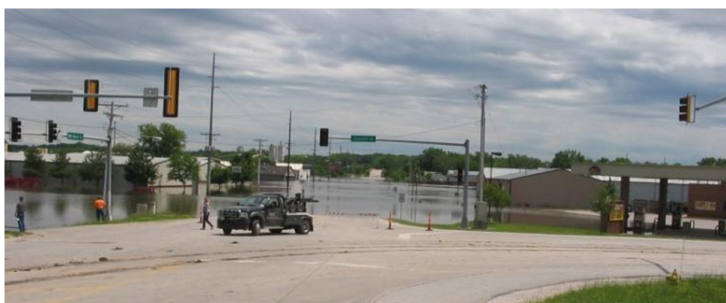
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NWS Launches Project to Document Flooding Impacts

by Brad Small, Senior Meteorologist, and Kenny Podrazik, Meteorologist

The National Weather Service (NWS) in Des Moines has started an ambitious project hoping to document impacts from flooding that have recently affected our 46 river forecast points as well as other larger streams. The goal of the project is to gather detailed flooding effects from as many locations as possible and correlate those impacts with archived river stages. This information will then be included in our Flood Warnings and Flood Statements giving our users guidelines regarding what infrastructure will be affected when water levels reach certain heights. This could be impacts to roads, buildings, or bridges.

If you have any photos taken during flood events along the following rivers, the NWS greatly appreciates receiving a copy of those to augment our project. The photos should detail specific impacts such as when flooding covers a bridge or road, or is affecting buildings or a significant amount of farmland. The river or creek name along with the date and approximate time of the photo will be needed. Other information such as building or street names is greatly appreciated.



The photographic evidence is needed along these rivers and creeks. A map of these locations can also be found by visiting our

Body of Water: Des Moines River and Beaver Creek
Location: Johnston Dr and NW Beaver Ave, Johnston, IA
Date: June 12, 2008
Time: Approximately 1030am CDT

(Continued on page 2)

NWS Launches Project to Document Flooding Impacts *continued from page 1*

Des Moines River and tributaries
 Raccoon River
 North Raccoon River
 Middle Raccoon River
 South Raccoon River
 East Fork Des Moines River
 Boone River
 Beaver Creek
 Walnut Creek
 Fourmile Creek
 North River
 South River
 Cedar Creek
 White Breast Creek
 English Creek

Cedar River and tributaries
 Winnebago River
 Shell Rock River
 Beaver Creek
 Blackhawk Creek
 West Fork Cedar River
 Iowa River and tributaries
 South Fork Iowa River
 South Skunk River and Tributaries
 Squaw Creek
 Indian Creek
 Chariton River and tributaries
 South Fork Chariton River
 Thompson River
 East Fork 102 River

Advanced Hydrologic Prediction Service.

The record flooding of 2008 had a tremendous impact across much of Iowa and pictures from that summer will provide a great example of how important this information is to the NWS and its operations. Any pictures within the past five years would be helpful. An example is provided below. Please submit pictures via e-mail to dmx.spotter@noaa.gov with the subject titled 'Impact Flooding Pictures' or via hard copy to our office at:

**National Weather Service
 Impact Statement Project
 9607 NW Beaver Dr.
 Johnston, IA 50131**

Des Moines Weather Forecast Office Hosts "2009 Winter Weather Media Workshop" *By Roger Vachalek, Meteorologist*

Just in time for the upcoming winter season, fourteen members of television and radio media attended the 2009 Winter Weather Media Workshop at the Des Moines, IA, Weather Forecast Office (WFO) on October 28 to learn about the latest technologies and techniques the National Weather Service (NWS) in Des Moines uses to forecast and generate winter weather forecasts. Members of the media came from Iowa, Minnesota, and Nebraska to participate in the workshop.

WFO meteorologists presented topics that included NWS winter weather products and climatology, forecasting banded heavy

(Continued on page 7)



Attendees from the media pose for a group photograph during the 2009 Winter Weather Media Workshop held on October 28, 2009 in Des Moines, Iowa. Photo taken by MIC Brenda Brock.

Record Cold and Early Snow in October

by Mindy Beerends, Meteorologist

the top ten for coldest Octobers ever recorded, many sites saw their coldest ever starts to the month. As many as 9 records across the area were broken for coldest maximum temperatures on October 2nd, 10th and 11th, and even a new record minimum temperature was set on the 11th at Ottumwa. Des Moines broke its old record cold maximum temperatures the weekend of the 10th and 11th, with a record low maximum of 42 on the 10th, and 41 on the 11th. These records broke the old records of 44, set in 1987 on the 10th, and of 46, which last occurred in 1909 on the 11th. The early outbreak of cold air also led to many sites receiving their first snowfall of the year.

On the night of Friday, October 9th into the early afternoon hours of Saturday, October 10th, many sites across central Iowa saw their first snowfall of the year. A vigorous upper level system slid east southeastward across the area from northern North Dakota and southern Canada Friday night to near Lake Superior and southern Ontario by Saturday evening. An associated cold front was draped across the state from northeast to southwest early Saturday morning, marking a sharp contrast between the warmer air to the south and the sub-freezing temperatures in the lower levels of the atmosphere blasting southward from the northern plains and southern Canada. The snow began across portions of west central Iowa by 3 am, with snow beginning at Des Moines around 6:30 am. Temperatures hovered around freezing or just below, with snow continuing in Des Moines through the morning hours, and finally tapering off across central and southern Iowa in the early afternoon. After the snow had tapered off just after noon in Des Moines, a total of 1.1" had fallen, setting a new record snowfall for the date. The previous record for snowfall on the 10th of October was 0.3" set in 1932. This also tied for the earliest 0.1" of snowfall which was last set on October 10th of 1932, and broke the record for the earliest occurrence of 1" of snowfall, previously set on October 20th, 1916. Snowfall records in Des Moines have been kept since 1884. Other snowfall reports from around the region from October 10th were 1" at Mason City, 3" near Atlantic in Cass County, 1" near Audubon, and 0.8" east of New Virginia in Warren County.

After looking at all the outlooks for the upcoming winter, it is hard to believe that everything is pointing to a warm winter with such a cold and wet October complete with a record early snowfall event! Even though October 2009 ended up in

Spring Flooding Potential *by Jeff Zogg, Senior Hydrologist*

Seasonally heavy to record high rainfall in October impacted Iowa in several ways. In addition to the obvious impacts of delaying the fall harvest, the heavy rainfall also pushed both stream flows and soil moisture into the much above normal to record high categories for this time of year. High stream flows and soil moisture this time of year do contribute to an increased risk of flooding in the spring.

Although we have had some drying conditions since the heavy rain fell, both stream flows and soil moisture remain well above normal across much of Iowa. Figures 1 and 2 show how both stream flow and soil moisture values compare to values in the historical record. The higher values are found mainly from the northern into southeastern parts of the state, where most of the heaviest rain fell in October.

Stream flows and soil moisture are not the only factors to consider when determining the risk of spring flooding. This winter's weather will also play a large role in determining the risk as well. Near normal snowfall will help to keep the risk of flooding above normal. Below normal and above normal snowfall will help to lower or further increase the risk of flooding, respectively. In addition, the speed at which the snow melts will also affect the risk of flooding. A rapid melt will further increase the risk of flooding, while a slower than normal melt will help to reduce the risk.

In addition to flooding, ice jams can cause significant damage and localized significant flooding. Although it is too early to confidently determine the risk of ice jam activity, we do know that both higher than normal stream levels along with prolonged periods of very cold weather increase the risk of ice jam activity. If the present-day above normal stream levels continue into the winter, then they will help to increase the risk of ice jam activity.

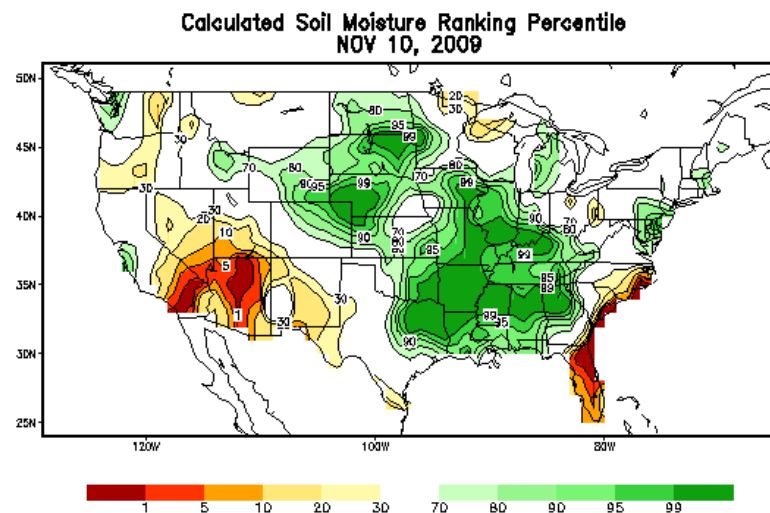
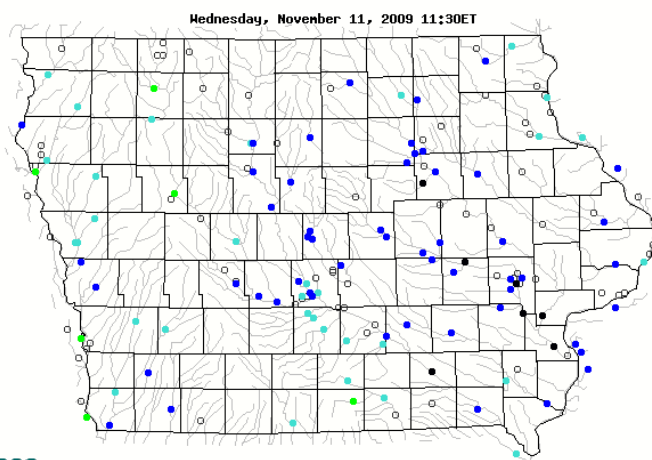


Figure 2: Soil moisture percentile values for 11/10/2009. The percentile values indicate how soil moisture on 11/10/2009 compares with soil moisture values for the same date in history. Percentile values of 25 to 75 indicate that soil moisture on 11/10/2009 was near normal. Increasingly higher percentile values indicate that soil moisture on 11/10/2009 was increasingly wetter than normal, respectively. Values greater than 90 indicate much above normal. A percentile value of 99 indicates that soil moisture on 11/10/2009 was at or near record high values for the same date in history. Source: NOAA/CPC.



USGS

Explanation - Percentile classes

●	●	●	●	●	●	●	○
Low	<10	10-24	25-75	76-90	>90	High	Not-ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Figure 1: Stream flow percentile values for 11/11/2009. The percentile values indicate how stream flow on 11/11/2009 compares with stream flow values for the same date in history. Percentile values of 25 to 75 indicate that stream flow on 11/11/2009 was near normal. Increasingly higher percentile values indicate that stream flow on 11/11/2009 was increasingly wetter than normal, respectively. Values greater than 90 indicate much above normal. Black dots indicate stream flows on 11/10/2009 which were at record highs for the same date in history. Source: U.S. Geological Survey.

We will monitor the weather conditions, including as they relate to the risk of spring flooding and ice jam activity, into next spring. If needed, we will provide updates on our office's web site. Beginning next February, we will issue the first of two spring flood outlooks. We will release those outlooks on February 19 and March 5. Depending on the threat of flooding, we will issue a third outlook on March 26. Look for those outlooks on our office's web site as well as in the text product ESFDMM.

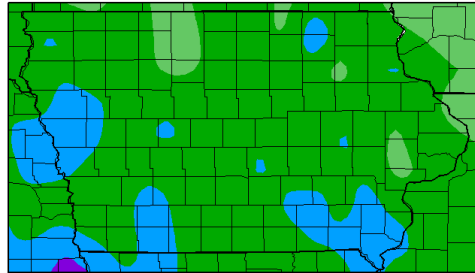
Feel free to contact me or any other member of our staff if you have questions. Jeff.Zogg@noaa.gov

Fun Fact: An amazing late season snowstorm tracked eastward from the northwestern high plains to the upper Great Lakes on May 27-29, 1947. The storm struck Iowa on May 28 and produced unprecedented snowfalls late in the spring. Snow accumulated across roughly the northern half of the state, with amounts of 2 inches at Waterloo, 4 inches at Mason City, 7.5 inches at Waukon, 8 inches at Cherokee, and 10 inches at Le Mars. To put in perspective how remarkably improbable this event was, no amount of snow has ever been recorded anywhere in Iowa at a later date.

Summer and Early Fall 2009 Weather Review

By Craig Cogil, Senior Meteorologist

Departure from Normal Temperature (°F)
8/1/2009 – 10/31/2009



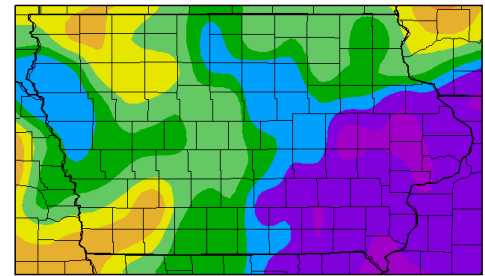
Generated 11/5/2009 at HPRCC using provisional data.

NOAA Regional Climate Centers

Temperatures:

Temperatures were unseasonably cool across Iowa and much of the upper Midwest this summer. The three months that comprise summer (June – August) all saw readings below normal for statewide averages. This lowered the number of growing degree days and put a pinch on crop maturity prior to the first freeze this fall. July was particularly cold with the month ending up being the coldest July on record in Iowa. September did climb back above normal, but October was once again very cool statewide - the third coldest October on record.

Percent of Normal Precipitation (%)
5/1/2009 – 10/31/2009



Generated 11/1/2009 at HPRCC using provisional data.

NOAA Regional Climate Centers

Precipitation:

Precipitation was quite generous across the entire state during the growing season. The only exceptions were in the northwest and southwest portions of the state where precipitation values were around 85 percent of normal. Heading to the east, precipitation increased as a percentage of normal with about the southeast third of the state receiving upwards of 130 percent of normal. The combination of cool temperatures and wet conditions made it difficult to harvest crops during the fall.

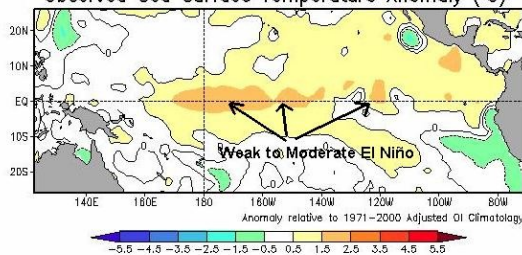
Statewide Averages and Rankings for Iowa

Month	Temperature	Departure from Normal	Rainfall	Departure from Normal	Temperature Ranking	Precipitation Ranking
June 2009	69.0°F	-0.8°F	5.27"	+0.63"	54 th Coolest	50 th Wettest
July 2009	68.1°F	-5.7°F	4.56"	+0.31"	1 st Coldest	38 th Wettest
August 2009	69.0°F	-2.3°F	5.69"	+1.50"	19 th Coolest	18 th Wettest
September 2009	63.9°F	+1.0°F	1.71"	-1.70"	65 th Warmest	18 th Driest
October 2009	45.1°F	-5.8°F	6.31"	+3.79"	3 rd Coolest	2 nd Wettest
Summer 2009	68.7°F	-2.9°F	15.68"	+2.61"	6 th Coolest	16 th Wettest

Statewide rankings are based upon 137 years of records. All values are preliminary. Summer Months include June through August.

Outlook for the Winter of 2009-2010 by Miles Schumacher, Senior Meteorologist

Observed Sea Surface Temperature Anomaly (°C)



7-day Average Centered on 21 October 2009

NCEP/EMC/Global Climate & Weather Modeling Branch

01v2

Figure 1: Sea Surface temperatures departure from normal, equatorial Pacific.

After a cool summer, the fall season began warm and dry across Iowa. September was slightly warmer than normal and quite dry in many locations. October came in with a sharp change to cold and wet. Many locations in the state will end up with one of the top 10 coldest and wettest Octobers on record. The season's first significant snow occurred on the 10th with a 1 to 6 inch snowfall from central into west central and parts of southwest Iowa.

As we head into the winter season, many have wondered if the early season colder weather of October is a harbinger of a cold winter ahead. The pattern across the Pacific has been changing gradually through the past few months with the signal of a new El Niño becoming evident in the temperature fields. Temperatures are warmer than normal across the entire

(Continued on page 6)

Historical Record for Winters Following Snowfall in October *by Mindy Beerends, Meteorologist*

With the cold weather and early snowfall in October, one would think we would be headed for a long cold winter. However, the latest winter outlooks suggest that El Nino conditions are expected to strengthen and last through the winter. El Nino conditions usually lead to a warmer than average winter, with no clear effect on precipitation throughout the region. The latest 3 month outlook for December, January and February indicates a 33 to 40 percent chance of being warmer than average, with equal chances of either below average, near average, or above average precipitation. So, what were the winters like in previous years when we saw snow in October? For Des Moines' snowfall period of record from 1884 to 2009, there have been a total of 16 Octobers, now 17, in which at least a 0.5" of snow has fallen. Of those 16 "snowy" Octobers, we looked at the average temperature for the upcoming winter season composed of December, January and February, along with whether or not the year was a supposed El Nino year. Some interesting statistics were uncovered! For the temperature period of record from 1878 to 2008 in Des Moines, it was found that the average temperature for the 3-month period of December through February was 24.0 degrees. Of those 16 years with snow in October 11 of the years led to an above average winter temperature, and 5 were below average. This results in 2:1 odds that a warm winter is in store for the area when there is snow in October. Of the 11 above average years, 3 were moderate to strong El Nino years, 3 were weak La Nina years, and 1 was in the neutral phase. Four were prior to 1950, before we began tracking El Nino/La Nina statistics. The two strong El Nino years led to a winter in which the average temperature was just over 6 degrees above average. The warmest was the winter of 1997 when the average temperature for the three month period was 30.1 degrees, making it the 11th warmest all time in Des Moines. Therefore if the current El Nino forecast verifies, and we combine that data with the early snowfall in October, it sounds like the winter of 2009 will likely be headed for a warm, above average, period from December through February. This is most likely some welcome news after having such a cool summer and fall.

Employee Spotlight—Aubry Wilkins, *Meteorologist Intern*



I do not know exactly why I chose to become a meteorologist, but I believe it had something to do with growing up in the Midwest and my fear of severe thunderstorms and love of snow days! Now, I have come to respect severe weather and loathe cold and shoveling snow. I am originally from Kansas City, KS and recently graduated from Creighton University in Omaha with a bachelor's degree in Atmospheric Sciences and a minor in Mathematics. In addition to Des Moines, I have had the privilege to work for the National Weather Service at the Omaha, NE and Topeka, KS forecast offices. I am interested in all types of weather, especially severe weather and the societal impacts of weather. Besides weather, I enjoy traveling, good books and Creighton basketball.

Employee Spotlight—Chris Southerlin, *Electronics Technician*

I was born and raised in Jefferson City, MO and resided there for 18 years, until 1998. During high school I was active in athletics and worked part-time as a baker. After high school, I enlisted in the US Air Force as a ground radio communications technician and assigned to Ramstein AFB, Germany and Elmendorf AFB, Alaska. After my active duty enlistment, I decided to stay in Alaska to complete a bachelor's of science degree in Technology from the University of Alaska Anchorage (UAA). After college graduation, I briefly worked for Tekmate Inc. until being activated for six months with the Alaska Air National Guard. While activated, I was able to apply for and get hired by the Federal Aviation Administration (FAA), Northwest Alaska region, based in Anchorage, AK. I worked for the FAA for three years until I transferred into NOAA National Weather Service (NWS) in Des Moines, IA in 2009. While working with the NWS one thing that stands out and makes my profession stimulating is the stronger sense of community involvement among co-workers and with the public. When not working, I enjoy traveling, physical fitness, biking, skiing, ballroom dancing, learning foreign languages, and I hope to pursue a private pilot license.



Outlook for the Winter of 2009-2010 *continued from page 4*

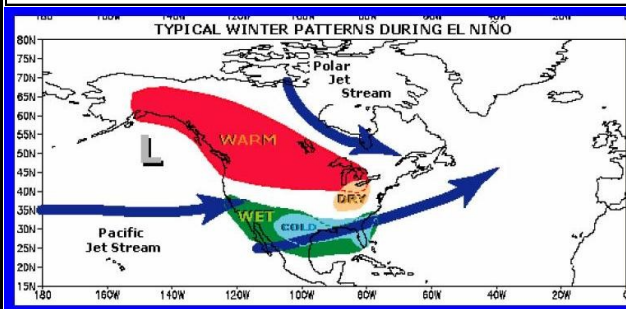


Figure 2: Typical patterns for North America associated with El Niño.

Although no two years are the same, one can look at weather patterns of the recent past to give some indications of near term weather trends in the future. This forecast is based on the best fit from several of the years that were similar to this fall so far. Considerations were also made for El Niño, and the possibility of it weakening sooner than would normally be expected. The effects of El Niño are likely to become obvious during the month of December. A stronger sub-tropical jet is likely, with the polar jet displaced to the north. Chinook, or downslope winds from the Rockies, will likely have the greatest effect on temperatures across the Northern Rockies and Northern Plains. As is traditionally the case, the warmer Chinook air is expected to spread southeast out of the Northern Rockies into Iowa. Warmer than normal conditions are expected over much of Iowa in December, and the entire state during January (Figure 3).

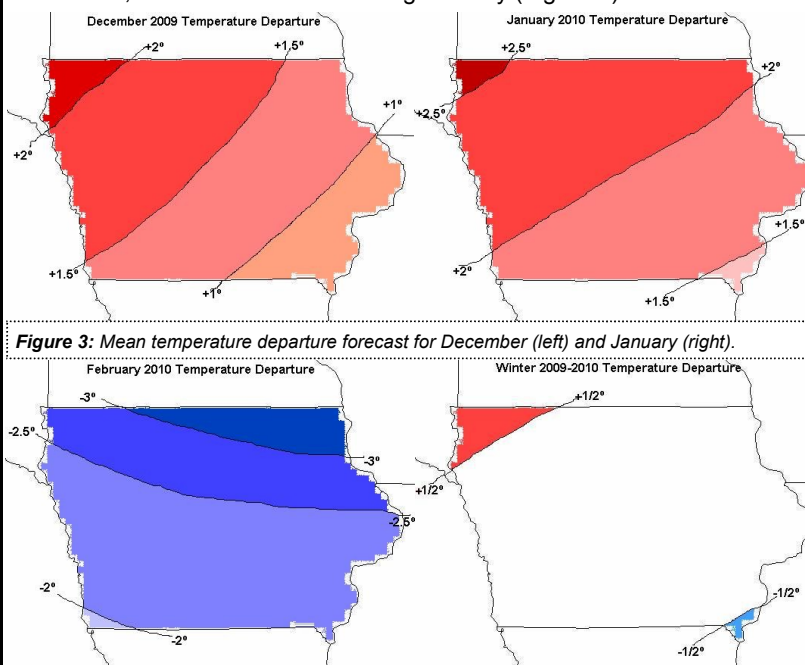


Figure 3: Mean temperature departure forecast for December (left) and January (right).

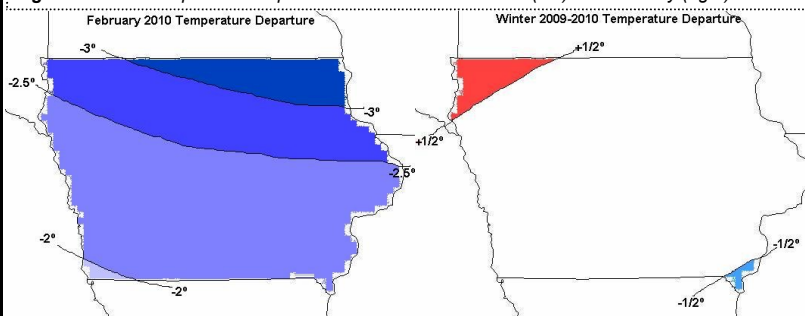


Figure 4: Mean temperature departure forecast for February (left), and the entire Winter (right).

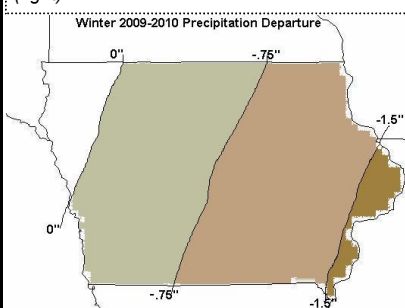


Figure 5: Winter 2009-2010 precipitation forecast departure from normal.

equatorial Pacific and indications are quite strong that we are moving toward a moderate El Niño by the early winter months of the boreal winter (Figure 1).

The atmospheric response to El Niño is not all that strong during the autumn months, however El Niño generally does have a significant impact on our weather during the winter months. As was mentioned before, careful monitoring of the Pacific Ocean state will be necessary. There are indications that the current El Niño conditions will peak slightly earlier than normal. Should that happen, the later part of the winter may well not be what one would normally expect during a moderate El Niño. Figure 2 shows the typical weather patterns that can be expected with an El Niño of at least moderate strength.

As we move into the later part of the winter, a reversal of pattern is quite possible. There are two reasons for this. One is that there are indications that El Niño will weaken considerably by mid winter. Another consideration is that it is not uncommon to see cool and wet spring seasons following El Niño and the cooler weather often starts in February. So, February in Iowa is expected to be cooler than normal. We could see a similar reversal to that of the winter of 2002-2003. In that winter, February was the only cool month of the winter, but was nearly as cool as January. Normally February is several degrees warmer than January. For the winter as a whole, the average temperature for Iowa is not likely to deviate much from normal (Figure 4).

Precipitation can be quite variable during an El Niño. The strongest signal for dry weather is from eastern Iowa into the Ohio River Valley. Frequently the dry weather extends all the way from the Northern Rockies, southeast into the Ohio River Valley. There is considerable uncertainty in the precipitation forecast, however the winter season does not produce a lot of precipitation across

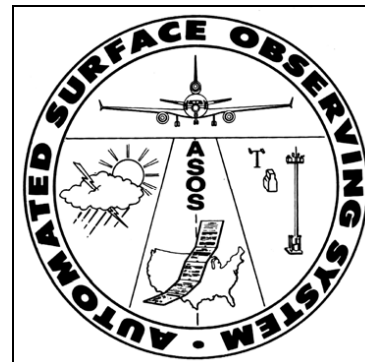
Iowa. It is likely that much of Iowa will see normal to below normal precipitation during the winter season, which meteorologically consists of the months of December, January, and February (Figure 5).

These outlooks are based more heavily on statistics than many of the methods used by the [Climate Prediction Center](http://www.cpc.ncep.noaa.gov/) (<http://www.cpc.ncep.noaa.gov/>). The complete set of official forecasts from the Climate Prediction Center can be found on our [website](http://www.weather.gov/climate/climate_prediction.php?wfo=dmx) (http://www.weather.gov/climate/climate_prediction.php?wfo=dmx).

Fun Fact: Tornadoes are extremely rare in Iowa during the winter months of December through February, but on January 24, 1967, an amazing outbreak occurred with at least 13 tornadoes touching down in eastern and southeastern Iowa, and more tornadoes striking parts of Illinois and southern Wisconsin. Several of the twisters produced significant damage, including two in Lee County that killed one person and injured at least ten others. All but one of the F2 or stronger tornadoes ever recorded in Iowa in December, January, or February occurred in this single outbreak.

New Ceilometers at Area Airports Coming Soon *by Dave Reese, Electronics System Analyst*

The NWS announces the replacement of the existing ceilometers at Automated Surface Observation Systems (ASOS) all across the country. Currently, there is a total of 884 commissioned ASOS sites sponsored by either the National Weather Service (NWS) or the Federal Aviation Administration (FAA). All of these sites are generating surface observations to support NWS operations and the National Airspace System (NAS). The legacy Cloud Height Indicator (CHI) sensor initially deployed with ASOS was the Vaisala CT12K ceilometer. In 1998, Vaisala discontinued production of the CT12K with an agreement to provide logistical support for the sensor through 2005. The NWS repair depot located in Kansas City, Missouri had an adequate inventory of logistical parts to support maintenance of the CT12K for at least two additional years (i.e., 2007). Therefore, a new ceilometer needed to be developed, tested, and deployed for the ASOS network.



The new ceilometer that was developed and tested is a modified Vaisala CL31. The CL31 uses a pulsed diode laser Light Detection and Ranging (LIDAR) technology, where short, powerful laser pulses are sent from the sensor in a vertical direction. The reflected light (backscatter) from the clouds, precipitation, or other obscuration is analyzed and used to determine the height of the cloud base, or the vertical visibility into the surface-based obscuration. The CL31 also employs enhanced single lens technology that helps to ensure a strong and stable signal over the entire range of measurement. This helps to provide greater reliability during precipitation, low clouds, and surface-based obscurations. This new ceilometer can provide measurements from the surface to 25,000 feet. In contrast, the range of measurement of the older CT12K is only from the surface to 12,600 feet. Although the CL31 is capable of detecting clouds up to 25,000 feet, the ASOS sky condition algorithms will not initially change with its implementation. The sky condition reports will continue to provide conditions from the surface to 12,000 feet until new software is provided in future operational ASOS software loads.

The current CT12K ceilometers will be replaced by the CL31 using a phased implementation approach. During each implementation stage, installation priority will be given to ASOS sites that are also Local Climatological Data (LCD) sites (that is Des Moines and Waterloo in central Iowa). There are currently 255 LCD ASOS locations nationwide. The NWS and FAA sponsor 235 and 20 LCD sites, respectively. This priority is being provided to support the climate community in case the decision is made to report clouds to 25,000 feet. Current projections indicate that each NWS Weather Forecast Office (WFO) can retrofit as many as two ASOS sites per month. If adequate funding is available and if there is no reduction in ceilometer manufacturing, and there are no other negative impacts that would affect CL31 availability or installations, then under these conditions, all of the CT12K ceilometers could be retrofitted within two years from the start date of the implementation of the CL31 sensors.

Associated website for more information about the new CL31 ceilometer can be found at:

<http://www.vaisala.com/weather/products/ceilometers.html#>

<http://www.hobeco.net/pdf/Ceilometer-CL31.pdf>

<http://sky.cuny.cuny.edu/wc/rz1h8i2h.pdf>

The new ASOS CL31 ceilometer.



"2009 Winter Weather Media Workshop" *continued from page 2*

snowfall and conditional symmetric instability, tools used to forecast precipitation type and societal impact considerations, a case study highlighting a challenging mixed precipitation event, creating forecasts using the Graphical Forecast Editor (GFE), and local and national forecast coordination. Presenters were Karl Jungbluth, Science Operations Officer, Jeff Johnson, Warning Coordination Meteorologist, Senior Meteorologists Ben Moyer and Rod Donavon as well as Meteorologists Melinda Beerends, Ken Podrazik, and Roger Vachalek.

Forecasting winter weather presents all sorts of challenges. With each passing year, new scientific research and forecasting techniques are developed, refined, and implemented by the staff at the NWS. Having a workshop like this helps the media better understand how the NWS forecasts winter precipitation events and creates the forecast that may be utilized for media broadcasts.

Attendees and workshop presenters also held an open discussion for ways to improve the working relationship and service between the Des Moines WFO and the customers in attendance. Meteorologist-In-Charge, Brenda Brock, stressed the importance of working as partners to do an even better job of protecting life and property.

The attendees expressed appreciation for the hospitality, opportunity to learn the latest techniques used by the WFO to generate winter weather forecasts, and for continued quality of service that the Des Moines WFO provides its customers.

2009 Cooperative Observer Length of Service Awards *by Brad Fillbach, Cooperative Program Manager*



Nicky Lenz (left) of Boyer received her 20 year Length of Service award. Picture: Nicky Lenz...Brad Fillbach, Hydro-Meteorological Technician (HMT), NWS Des Moines (DMX).



Dana Meyer (left) and Al Lauck (middle) of KLGA Algona receive their 50 year Institutional Length of Service award from Jeff Johnson, WCM, NWS DMX.



Tony Coloff (left) of KIOF Forest City receives their 25 year Institutional Length of Service award from Jeff Johnson, Warning Coordination Meteorologist (WCM), NWS DMX.



KQWC radio station in Webster City received their 25 year Institutional Length of Service Award. Brenda Brock, Meteorologist In Charge (MIC), NWS DMX...Pat Powers, KQWC radio...Jeff Zogg, Senior Service Hydrologist, NWS DMX.

Fun Fact: On November 11, 1911 (11/11/11), one of the most amazing cold fronts on record swept across the central United States. Known to this day as "The Great Blue Norther", the front was characterized by incredibly rapid temperature falls as it passed through the region. By midday on the 11th, the front had already passed through most of Iowa, but in the southeast winds remained southwesterly allowing temperatures to warm substantially before the front blasted through in the early afternoon. A squall line formed along the front in far southeastern Iowa, with a tornado tracking just northwest of Davenport. At Keokuk the temperature peaked at 79 F around noon, then fell 37 degrees in just one hour. By midnight, the temperature fell to 14 F with about an inch of sleet falling during the evening. That is a temperature drop of 65 degrees in 12 hours! The following day Keokuk's high temperature was only 17 F. At Albia the observer noted that the temperature rose to 72 F by mid morning, then the cold front moved through with rain changing to snow and blizzard conditions ensuing, and the temperature fell all the way to 5 F by 9 pm making it a drop of 67 degrees in less than 12 hours.



Dianne Hanson (right) of Britt receives her 15 year Length of Service award from Rob Deroy, Data Acquisition Program Manager (DAPM), NWS DMX.

WWII Veteran... *continued from page 1*

Leonard earned 8 battle stars during WWII. He served as a radio operator and top turret gunner on his B-24 crew, in the 485th Bomb group of the US Air Force, which operated in southern Europe, the "underbelly" of Nazi German Adolf Hitler's "Fortress Europa." Leonard and his crew mates bombed munitions plants and transportation installations in southern France, Rome, the Balkans, the Rhineland, the North Apennines, northern France, the Po Valley and central Europe. On many missions they were protected by tight escorts of red-tailed North American P-51 Mustang fighter planes flown by the all African American 332nd Fighter Group...The Tuskegee Airmen...to whom Leonard is forever grateful.

Leonard recalls a close call. A piece of shrapnel pierced the cockpit windshield, creating "a hole as big as your fingernail" and striking his pilot in the flak helmet, stunning him. The co-pilot, who had just been relieved from duty, scurried to take the controls until the pilot could be revived.

One turn of fate he recalls while he was stateside. He and a number of others were pulled out of airplane radio operators' school and subjected to a physical. The scuttlebutt was that the Army was looking for additional men for the invasion of Normandy, to be later known as D-Day. Leonard was misdiagnosed with a hernia and sent back to radio school. Had it not been that one doctor's diagnosis, Leonard said he could have been saddled with "70 pounds of gear" and sent to the infantry to fight and perhaps die on the invasion beaches.

Leonard is saddened that humankind still resorts to war to resolve differences, but he takes satisfaction at having helped preserve freedom. He marvels at his good fortune at having survived World War II.



Climatological Data for July to October 2009

Location	Month	Average Temp	Departure	Highest	Lowest	Rain / Snow	Departure
Des Moines	July	72.0°F	-4.1°F	90°F (24th)	54°F (17th)	2.36" / M	-1.82" / M
	August	72.5°F	-1.4°F	95°F (8th)	49°F (30th)	4.29" / M	-0.22 / M
	Sept	67.2°F	+2.1°F	84°F (12th)	42°F (30th)	1.22" / M	-1.93" / M
	Oct	47.7°F	-5.1°F	70°F (21st)	30°F (24th, 11th)	6.53" / 1.1"	+3.91" / +0.7"
Mason City	July	66.5°F	-5.9°F	85°F (24th)	50°F (29th)	4.15" / M	-0.19" / M
	August	66.3°F	-3.5°F	89°F (8th)	38°F (31st)	2.51" / M	-2.01" / M
	Sept	61.6°F	+0.6°F	82°F (18th, 16th)	34°F (30th)	1.94" / M	-1.34" / M
	Oct	42.3°F	-6.4°F	71°F (19th)	20°F (11th)	6.71" / 0.3"	+4.21" / -0.3"
Waterloo	July	67.6°F	-6.0°F	87°F (27th)	51°F (29th)	5.52" / M	+1.32" / M
	August	68.4°F	-2.8°F	90°F (8th)	41°F (31st)	5.36" / M	+1.28" / M
	Sept	63.0°F	+0.4°F	82°F (15th, 13th)	38°F (30th, 29th)	2.09" / M	-0.86" / M
	Oct	44.4°F	-5.8°F	70°F (21st)	21°F (11th)	5.86" / 0.0"	+3.37" / -0.1"
Ottumwa	July	68.4°F	-8.3°F	86°F (24th)	51°F (17th, 18th)	3.74" / M	-0.71" / M
	August	69.4°F	-4.8°F	89°F (8th)	44°F (31st)	9.31" / M	+5.28" / M
	Sept	63.7°F	-1.9°F	82°F (12th)	40°F (30th)	4.42" / M	+0.35" / M
	Oct	46.6°F	-7.1°F	69°F (21st)	25°F (10th, 11th)	5.99" / M	+3.24" / M

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Be Prepared for Winter Weather

The National Weather Service (NWS) in conjunction with the Iowa Homeland Security and Emergency Management Agency declared November 12, 2009 as Winter Weather Awareness Day in Iowa. Each year, winter returns to Iowa and can produce snow storms, blizzards, ice storms and periods of extremely cold temperatures and dangerous wind chill temperatures.

Here are useful winter weather safety links:

NWS Des Moines Winter Weather Preparedness (<http://www.crh.noaa.gov/dmx/?n=winter>)

National Winter Weather Preparedness (<http://www.weather.gov/om/winter/index.shtml>)

Be Ready Iowa! (<http://www.bereadyiowa.org/>)

Remember, the NWS simplified its winter weather warning and advisory products in 2008. For additional information visit this website:

(http://www.crh.noaa.gov/news/display_cmsstory.php?wfo=dmx&storyid=18008&source=0)

Another change in winter weather products occurred late last winter. The NWS in Des Moines no longer issues Short Term Forecasts during winter storm events. Instead, we will issue more frequent updates to the Watch/Warning/Advisory product to keep everyone informed about a winter storm. The Short Term Forecast will still occasionally be issued to enhance the forecast during sub-advisory events and during the convective season for short term thunderstorm forecasts.

Fun Fact: One of the most remarkable hailstorms in Iowa history struck portions of Adair and Union counties on August 6, 1890. The storm produced incredible amounts of hailstones. Near Orient, Iowa, an observer wrote that "the hail destroyed all green vegetation and small animals such as rabbits, squirrels, etc., and all the birds. In many places it drifted to a depth of six feet [in gullies and ravines], where it remained...for twenty-six days after the storm, or until September 1st." Another observer in Creston wrote, "hail commenced to fall...for forty minutes...on the bottomlands hail was drifted from four to six feet deep, and...was found in large quantities for twelve days after the date of the storm."